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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/798,584	03/10/2004	Se-Hwan Son	B-4265DIVofPCT 621722-3	6343
7590 08/17/2006			EXAMINER	
Richard P. Berg c/o LADAS & PARRY Suite 2100 5670 Wilshire Boulevard Los Angeles, CA 90036-5679			YAMNITZKY, MARIE ROSE	
			ART UNIT	PAPER NUMBER
			1774	
DATE MAILED: 08/17/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/798,584

Applicant(s)

SON ET AL.

Examiner

Marie R. Yamnitzky

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ ~~Certified copies of the priority documents have been received in~~ Application No. 09/914,731, which is a
  - ☒ Copies of the certified copies of the priority documents have been received in ~~this~~ National Stage application, from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>rec'd 10 Mar 2004</u> . | 6) <input type="checkbox"/> Other: _____  |

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1. The preliminary amendment filed March 10, 2004, which amends the specification and claims 1, 2, 10, 12 and 13, and adds claims 14-20, has been entered.

Claims 1-20 are pending.

2. Claims 1-4, 6, 7 and 9-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Possibilities for each R as defined in claims 1, 12 and 17 include “C<sub>1</sub>-C<sub>12</sub> hydrocarbon” and “aromatic hydrocarbon”. It is not clear if any aromatic hydrocarbon may be used, or only aromatic hydrocarbons that have 1-12 carbons.

Possibilities for each R’ as defined in claims 6 and 7 include “hydrocarbon having 1~15 carbon atoms” and “aromatic group”. The phrase “aromatic group” encompasses, but is not limited to, aromatic hydrocarbons. It is not clear if any aromatic hydrocarbon may be used, or only aromatic hydrocarbons that have 1~15 carbons.

Claim 15 is confusing in stating that the compound of Formula I is a light-emitting diode. It is not clear how the compound alone can be a light-emitting diode.

Claim 18: Proper antecedent basis is lacking for “the hole-injection layer” as recited beginning in line 2. In line 2, “the” (third occurrence) should be changed to --a--.

Claim 19: Proper antecedent basis is lacking for “the hole-injecting layer” as recited at the beginning of line 5, and for “the hole-transporting layer” as recited at the beginning of line 10. In lines 5 and 10, “the” (first occurrence) should be changed to --a--.

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3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claim 17 is rejected under 35 U.S.C. 102(b) as being anticipated by Czarnik et al. (US 4,780,536).

Czarnik et al. disclose compounds represented by Chemical Formula 1 as defined in claim 17. The preamble recitation of “hole-injecting layer material” indicates the intended use of the compound and places no positive limitations on the material beyond the requirements imposed by the formula. It is reasonable to expect that the compounds disclosed by Czarnik et al. that are within the scope of present Chemical Formula 1, such as the compound of Czarnik’s Example 1 and claim 2 (which is the compound of applicant’s Chemical Formula 1a), could be used for the same purpose.

5. Claims 1-4, 9-12 and 14-18 are rejected under 35 U.S.C. 102(e) as being anticipated by Ueno et al. (US 6,436,599 B1).

Applicant claims priority of two foreign applications, one of which was filed prior to the U.S. filing date of Ueno’s application. Applicant cannot rely upon the foreign priority papers to

overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

See the whole patent. In particular, see Fig. 1-3, column 3, lines 9-17, c. 3, l. 45-c. 4, l. 4, formulae (4) and (5) in c. 4, formula (6) in c. 5, formula (10) in c. 6, formula (15) in c. 7, c. 11, l. 60-c. 14, l. 22, c. 23, l. 42-67 and c. 24, l. 15-40.

Compound Nos. (4), (5), (6), (10) and (15) as represented by the formulae in columns 4-7 of the patent to Ueno et al. are specific examples of compounds represented by present Chemical Formula 1. The compounds are disclosed for use in a layer interposed between an anode and a cathode of an organic luminescence (light-emitting) device. Ueno et al. teach various layer structures for the organic luminescence devices, and teach that the compounds may be used in a layer having any of the functions of hole transporting, electron transporting and/or luminescence (e.g. see c. 12, l. 6-18, and c. 14, l. 3-6 and 16-20).

Thicknesses within the range of present claim 9 are taught, for example, at c. 11, l. 65-67 (10-10,000 nm = 0.01-10  $\mu$ m), c. 12, l. 19-21 and 41-44, and c. 13, l. 5-9.

Ueno's compounds may be used in combination with compounds within the scope of those recited in claim 10. For example, the formulae set forth in c. 13-17 include arylamine based compounds and polycyclic aromatic compounds.

The anode materials recited in present claim 11 are disclosed by Ueno et al. For example, see c. 23, l. 42-51.

The device structures taught by Ueno et al. include devices in which the layer comprising the compound is in physical contact with the anode and/or the cathode. Ueno et al. teach that a

metal oxide may be used for the anode and/or the cathode (c. 23, l. 42-60). Accordingly, it is the examiner's position that it is reasonable to expect that Ueno's compounds are capable of forming a stable interface with metal oxides as recited in present claim 14.

Ueno's device of Example 1 (c. 24) meets the limitations of the device as claimed in present claims 1, 4, 11, 14 and 15.

6. A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

7. Claims 5 and 8 are rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 5 and 8 of prior U.S. Patent No. 6,720,573 B2. This is a double patenting rejection.

Claims 5 and 8 of the patent depend from patent claim 1, which requires the organic compound represented by Chemical Formula 1 to be a p-type organic semiconductor. While present claim 1, from which present claims 5 and 8 depend, does not limit the compound of Formula 1 to a p-type organic semiconductor, present claims 5 and 8 require the same specific compound required by patent claims 5 and 8, respectively. The compounds of patent claims 5 and 8 and present claims 5 and 8 have the same properties.

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8. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

9. Claims 1-20 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-31 of U.S. Patent No. 6,720,573 B2. Although the conflicting claims are not identical, they are not patentably distinct from each other. The present claims do not limit the compound represented by Chemical Formula 1 to compounds which are p-type organic semiconductors, but one of ordinary skill in the art would have been motivated to utilize p-type organic semiconductors represented by Chemical Formula 1 at least by present claims 5 and 8, which are limited to specific compounds that are suitable for the p-type organic semiconductor represented by Chemical Formula 1 of the patent, and by the present claims

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which require the compound represented by Chemical Formula 1 to be used in a hole-injecting and/or hole-transporting layer.

10. Miscellaneous:

In line 1 of claims 1 and 12, the recitation of "at least" is superfluous given the recitation of "one or more".

The chemical formulae as set forth in claims 1, 6-8, 12 and 17 are not clearly printed (for example: incomplete letters, missing bonds between ring structure and substituents).

In claims 6 and 7, the recitation of "phenyl" is superfluous since a phenyl group is an aromatic group.

In line 3 of claim 10, "--consisting--" should be inserted after "group" in order to utilize proper Markush terminology.

In lines 8 and 13 of claim 19, "naphtyl" should read --naphthyl--.

11. Any inquiry concerning this communication should be directed to Marie R. Yamnitzky at telephone number (571) 272-1531. The examiner works a flexible schedule but can generally be reached at this number from 6:30 a.m. to 4:00 p.m. Monday, Tuesday, Thursday and Friday, and every other Wednesday from 6:30 a.m. to 3:00 p.m.

The current fax number for all official faxes is (571) 273-8300. (Unofficial faxes to be sent directly to examiner Yamnitzky can be sent to (571) 273-1531.)

MRY  
August 15, 2006



MARIE YAMNITZKY  
PRIMARY EXAMINER

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